

In the Claims:

Please amend Claims 17, 18, 19, 22, 24, 25, 26, 32-34, 42, 44, 45 and 53; cancel Claims 35-41, 43 and 46-52; and add new Claims 57-77, all as shown below. Applicant reserves the right to prosecute any originally presented or canceled claims in a continuing or future application.

1-16
~~1-16~~. (Previously Canceled).

17 ~~17~~. (Currently Amended) A method for operating a replicated naming service for service providers on a plurality of processing devices ~~on a first processing device, the replicated naming service comprising a first naming service on a first processing device indicating a plurality of services provided by the first processing device, the method comprising the steps of:~~

operating a first naming service having service pools on a first processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service;

operating a second naming service having service pools on a second processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service, and wherein second naming service is a replicate of said first naming service;

[[[A]]] receiving a first signal from a second processing device, wherein the first signal indicates a change in at least one instance of a service provided by the second processing device; and

[[[B]]] modifying the first naming service according to the first signal.

18 ~~18~~. (Currently Amended) A method according to Claim 17, the ~~Step B~~ step of modifying the first naming service further comprising:

[[[B1]]] classifying the instance of the service indicated by the first signal according to a service type; and

[[[B2]]] modifying a portion of the first naming service corresponding to the service type according to the first signal, wherein the portion of the first naming service includes a plurality of instances of a service of the service type.

- 19 ~~18~~. (Currently Amended) The method of Claim 18, the ~~Step B2~~ step of modifying a portion of the first naming service further comprising the steps of:
- creating a reference to the instance of the service indicated by the first signal, wherein the reference enables access to the instance of the service by a service user; and
- adding the reference to the portion of the first naming service corresponding to the service type.
- 20 ~~20~~. (Original) The method of Claim 19, wherein:
the service user is an object.
- 21 ~~21~~. (Original) The method of Claim 19, wherein:
the service user is an application.
- 22 ~~22~~. (Currently Amended) The method of Claim 19, wherein:
the service user is ~~[[an]]~~ a Java™ Bean.
- 23 ~~23~~. (Original) The method of Claim 19, wherein:
the reference is a stub.
- 24 ~~24~~. (Currently Amended) The method of Claim 19, wherein:
the reference is ~~[[a]]~~ an Enterprise Java™ Bean.
- 25 ~~25~~. (Currently Amended) A method for operating a replicated naming service for service providers on a plurality of processing devices, ~~the replicated naming service comprising a first naming service on a first processing device indicating a plurality of services provided by the first processing device and a second naming service on a second processing device indicating a plurality of services provided by the second processing device, the method~~ comprising the steps of:

operating a first naming service having service pools on a first processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service;

operating a second naming service having service pools on a second processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service, and wherein second naming service is a replicate of said first naming service;

[[A]] communicating a first signal from the second processing device to the first processing device, wherein the first signal indicates a change in an instance of a service of a first service type provided by the second processing device;

[[B]] modifying the first naming service according to the first signal;

[[C]] communicating a second signal from the first processing device to the second processing device, wherein the second signal indicates a change in an instance of a service of a second service type provided by the first processing device; and

[[D]] modifying the second naming service according to the second signal.

26 ~~26.~~ (Currently Amended) The method of Claim 25, wherein ~~Step B~~ the step of modifying the first naming service further comprises:

creating a first reference to the instance of the service indicated by the first signal, wherein the first reference enables access to the instance of the service by a service user;

adding the first reference to a portion of the first naming service corresponding to the first service type, wherein the portion of the first naming service includes a plurality of instances of a service of the first service type;

creating a second reference to the instance of the service indicated by the second signal, wherein the second reference enables access to the second instance of the service by the service user; and

adding the second reference to a portion of the second naming service corresponding to the second service type, wherein the portion of the second naming service includes a plurality of instances of a service of the second service type.

27 ~~27.~~ (Original) The method of Claim 26, wherein:

the service user is an object.

~~28~~ 28. (Original) The method of Claim 26, wherein:
the service user is an application.

~~29~~ 29. (Original) The method of Claim 26, wherein:
the service user is an Java™ Bean.

~~30~~ 30. (Original) The method of Claim 26, wherein:
the first and second references are stubs.

~~31~~ 31. (Original) The method of Claim 26, wherein:
the first and second references are Enterprise Java™ Beans.

~~32~~ 32. (Currently Amended) A method of operating a replicated naming service for service providers on a plurality of processing devices ~~on a first processing device, the method~~ comprising the steps of:

operating a first naming service having service pools on a first processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service;

operating a second naming service having service pools on a second processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service, and wherein second naming service is a replicate of said first naming service;

[[A]] waiting to receive a first signal from a second processing device; and

[[B]] modifying the first naming service when the first signal is not received within a predetermined period of time.

~~33~~ 33. (Currently Amended) The method of Claim 32, wherein ~~Step B~~ the step of modifying the first naming service further comprises:

[[[B1]]] removing from the first naming service a reference to an instance of a service provided by the second processing device.

34 ~~34.~~ (Currently Amended) A method of operating a replicated naming service ~~on a first processing device for service providers on a plurality of processing devices~~, the method comprising:
operating a first naming service having service pools on a first processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service;
operating a second naming service having service pools on a second processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service, and wherein second naming service is a replicate of said first naming service;

[[[A]]] transmitting from a second processing device to the first processing device a plurality of first signals of a first signal type, each of the first signals indicating a change in an instance of a service provided by the second processing device;

[[[B]]] transmitting from the second processing device to the first processing device a second signal of a second signal type;

[[[C]]] comparing, by the first processing device, the most recently transmitted first signal to the second signal in order to determine if one of the plurality of first signals has been lost; and

[[[D]]] transmitting from the first processing device to the second processing device a third signal indicating the lost first signal.

35-41
~~35-41.~~ (Canceled).

42 ~~42.~~ (Currently Amended) A method for ~~creating~~ accessing a replicated naming service, the method comprising the steps of:

[[[A]]] locating a preliminary naming service provider, wherein the preliminary naming service provider provides a first replica aware instance of a first naming service;

[[[B]]] accessing the first replica aware instance of the first naming service to locate at least one additional naming service provider providing a subsequent replica aware instance of the first naming service;

[[[C)]] sending a signal to each of the located naming service providers; and

[[[D)]] receiving a response to the signal from at least one of the located naming service providers, wherein the response indicates at least one replica aware instance of at least one subsequent naming service provided by the responding naming service provider.

43
43. (Canceled)

44
44. (Currently Amended) The method of claim [[42]] 41, wherein:
the first naming service is a JavaTM Naming and Directory Service (JNDI).

45
45. (Currently Amended) The method of claim 42, wherein:
the preliminary naming service provider is located via a Domain Naming Service (DNS) lookup.

46-52
46-52. (Canceled).

53
53. (Currently Amended) A distributed processing system having a replicated naming service for service providers on a plurality of processing devices comprising:
a first naming service ~~for indicating a plurality of services provided by the first processing device~~ having service pools on a first processing device, wherein a service pool includes a replica aware stub for each service provider providing a similar service;
a first signal responding means in communication with the first naming service;
a second naming service ~~for indicating a plurality of services provided by the second processing device~~ having service pools on a second processing device, wherein second naming service is a replicate of first naming service, and wherein a service pool includes a replica aware stub for each service provider providing a similar service; and
a first signal generating means for generating a first signal indicating a change in an instance of a service provided by the second processing device and communicating the first signal to the first

signal responding means, wherein the first signal responding means modifies the first naming service in response to the first signal.

54. (Original) The distributed processing system of Claim 53, wherein:
the first signal responding means modifies the first naming service to incorporate a reference to the instance of a service indicated by the first signal, wherein the reference enables access to the instance of the service by a service user.

55. (Original) The distributed processing system of Claim 53, further including:
a second signal responding means in communication with the second naming service; and
a second signal generating means for generating a second signal indicating a change in an instance of a service provided by the first processing device and communicating the second signal to the second signal responding means, wherein the second signal responding means modifies the second naming service in response to the second signal.

56. (Original) The distributed processing system of Claim 55, wherein:
the second signal responding means modifies the second naming service to incorporate a reference to the instance of a service indicated by the second signal, wherein the reference enables access to the instance of the service by a service user.

57. (New) An apparatus having replicated naming service for service providers on a plurality of processing devices, comprising:
a communication medium;
a first processing device, coupled to the communication medium having a naming service tree comprising nodes, wherein each node of naming service tree include a service pool comprising replica aware stub for each service provider providing a similar service; and
a second processing device, coupled to the communication medium, having a replicate naming service tree comprising nodes, wherein each node of replicate naming service tree include

a service pool comprising a copy of said replica aware stub for each service provider providing a similar service.

~~58~~ 58. (New) The apparatus of claim 57 further comprising a client that looks up a service provider from either one of said naming service trees.

~~59~~ 59. (New) The apparatus of claim 58 wherein a look up by the client for a service provider on one of the processing devices enables the client to obtain a replica aware stub from the naming service tree on that processing device.

~~60~~ 60. (New) The apparatus of claim 59 wherein said replica aware stub contacts the service pool to refresh the client's list of service provides.

~~61~~ 61. (New) An apparatus having replicate naming service for service providers on a plurality of processing devices, comprising:
a communication medium;
a first processing device, coupled to the communication medium, having a naming service comprising service pools, wherein a service pool includes a replica aware stub for each service provider providing a similar service; and
a second processing device, coupled to the communication medium, having a replicate naming service comprising service pools, wherein a service pool includes a replica aware stub for each service provider providing a similar service.

~~62~~ 62. (New) An apparatus having replicated naming service for service providers on a plurality of processing devices, comprising:
a communication medium;
a first processing device, coupled to the communication medium having a naming service tree includes at least one replica aware stub; and

a second processing device, coupled to the communication medium, having a replicate naming service, wherein the replicate naming service tree includes at least one replica aware stub.

~~64~~ 63. (New) The apparatus of claim 62, wherein the replica aware stubs of naming service and replicate naming service comprise load balancing logic.

~~64~~ 64. (New) The apparatus of claim 62, wherein the replica aware stubs of naming service and replicate naming service comprise fail over logic.

~~65~~ 65. (New) The apparatus of claim 62 wherein a look up by the client for a service provider on one of the processing devices enables the client to obtain a replica aware stub from the naming service on that processing device.

~~66~~ 66. (New) A system for providing replicated naming service on a plurality of processing devices, comprising:

a first processing device, coupled to a communication medium having a naming service tree includes at least one replica aware stub; and

a second processing device, coupled to the communication medium, having a replicate naming service, wherein the replicate naming service tree includes at least one replica aware stub.

~~67~~ 67. (New) The system of claim 66, wherein the replica aware stubs of naming service and replicate naming service comprise load balancing logic.

~~68~~ 68. (New) The system of claim 66, wherein the replica aware stubs of naming service and replicate naming service comprises fail over logic.

~~69~~ 69. (New) The system of claim 66 wherein a look up by the client for a service provider on one of the processing devices enables the client to obtain a replica aware stub from the naming service on that processing device.

⁷⁰
~~69.~~ (New) The system of claim 69, wherein the obtained replica aware stub comprises fail-over logic, so that if a service provider fails, the replica aware stub uses another service provider.

⁷¹
~~70.~~ (New) The system of claim 69, wherein the client uses the obtained replica aware stub to access the service provider.

⁷²
~~72.~~ (New) A method for providing replicated naming service on a plurality of processing devices, comprising:

providing a naming service tree that includes at least one replica aware stub on a first processing device coupled to a communication medium; and

providing a replicate naming service tree that includes at least one replica aware stub on a second processing device coupled to a communication medium.

⁷³
~~73.~~ (New) The method of claim 72, wherein the replica aware stubs of naming service and replicate naming service comprise load balancing logic.

⁷⁴
~~74.~~ (New) The method of claim 72, wherein the replica aware stubs of naming service and replicate naming service comprise fail over logic.

⁷⁵
~~75.~~ (New) The method of claim 72 wherein a look up by the client for a service provider on one of the processing devices enables the client to obtain a replica aware stub from the naming service on that processing device.

⁷⁶
~~76.~~ (New) The method of claim 75, wherein the obtained replica aware stub comprises fail-over logic, so that if a service provider fails, the replica aware stub uses another service provider.

⁷⁷
~~77.~~ (New) The method of claim 75, wherein the client uses the obtained replica aware stub to access the service provider.